

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-13. (Canceled)

14. (Currently amended) An isolated polypeptide comprising a vanadium haloperoxidase polypeptide consisting of a catalytic domain that complexes a vanadium ion and catalyzes the oxidation of o-dianisidine (ODA), wherein the vanadium haloperoxidase polypeptide comprises an amino acid sequence having at least 70% 90% sequence identity to the sequence from residue 435 to residue 632 of SEQ ID NO:2, and has a molecular weight of no more than 40 kDa.

15. (Original) The isolated polypeptide of claim 14, wherein the polypeptide comprises an Ala residue at a position corresponding to position 455 of SEQ ID NO: 2, a Cys residue at a position corresponding to position 457 of SEQ ID NO: 2, and a Val residue at position 525 of SEQ ID NO: 2.

16. (Canceled)

17. (Currently amended) The isolated polypeptide of claim 16 14, wherein the polypeptide has at least 80% 95% identity to a polypeptide as set forth in SEQ ID NO:2.

18. (Currently amended) The isolated polypeptide of claim 16 14, wherein the amino acid sequence is residue 435 to residue 632 of SEQ ID NO:2.

19. (Currently amended) The isolated polypeptide of claim 16 14, wherein the polypeptide has a molecular weight of about 20 kDa.

20. (Currently amended) The isolated polypeptide of claim ~~16~~ 14, wherein the polypeptide is immobilized on a solid surface.

21. (Currently amended) The isolated polypeptide of claim ~~16~~ 14, wherein the polypeptide further comprises a cleavable linker sequence.

22. (Original) The isolated polypeptide of claim 21, wherein the cleavable linker sequence is an enterokinase cleavable linker sequence.

23. (Currently amended) The isolated polypeptide of claim ~~16~~ 14, wherein the polypeptide further comprises an purification tag.

24. (Original) The isolated polypeptide of claim 23, wherein the purification tag comprises a plurality of histidine residues.

25. (Original) A method for enzymatically halogenating a compound, the method comprising contacting the compound with an isolated polypeptide of claim 14.

26. (Original) The method of claim 25, wherein the compound is a protein.

27. (Currently amended) A method for enzymatically oxidizing a compound, the method comprising contacting the compound with an isolated polypeptide of claim ~~16~~ 14.

28-36. (Canceled)